Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A silicoaluminophosphate molecular sieve comprising at least one intergrown phase of molecular sieves having AEI and CHA framework types, wherein said intergrown phase has an AEI/CHA ratio of from about 5/95 to 40/60 as determined by DIFFaX analysis, using the powder X-ray diffraction pattern of a calcined sample of said silicoaluminophosphate molecular sieve.

2. (Original) The silicoaluminophosphate molecular sieve of claim 1, wherein said intergrown phase has an AEI/CHA ratio of from about 7/93 to 38/62.

3. (Original) The silicoaluminophosphate molecular sieve of claim 1, wherein said intergrown phase has an AEI/CHA ratio of from about 8/92 to 35/65.

4. (Original) The silicoaluminophosphate molecular sieve of claim 1, wherein said intergrown phase has an AEI/CHA ratio of from about 9/91 to 33/67.

5. (Original) The silicoaluminophosphate molecular sieve of claim 1 wherein the molecular sieve having CHA framework type is SAPO-34.

6. (Original) The silicoaluminophosphate molecular sieve of claim 1 wherein the molecular sieve having AEI framework type is SAPO-18, ALPO-18 or a mixture of SAPO-18 and ALPO-18.

7. (Original) The silicoaluminophosphate molecular sieve of claim 1 wherein said silicoaluminophosphate molecular sieve has an X-ray diffraction pattern having at least one reflection peak in each of the following ranges in the 5 to 25 (2θ) range:

2θ (CuKα)
9.3 - 9.6
12.7 - 13.0
13.8 - 14.0
15.9 - 16.1
17.7 - 18.1
18.9 - 19.1
20.5 - 20.7
23.7 - 24.0

8. (Original) The silicoaluminophosphate molecular sieve of claim 5 wherein the X-ray diffraction pattern has no reflection peak in the 9.8 to 12.0 (2θ) range.

9. (Original) The silicoaluminophosphate molecular sieve of claim 5 wherein the X-ray diffraction pattern has no broad feature centered at about 16.9 (2θ).

10. (Original) The silicoaluminophosphate molecular sieve of claim 8 wherein the X-ray diffraction pattern has no broad feature centered at about 16.9 (2θ).

11. (Original) The silicoaluminophosphate molecular sieve of claim 6 wherein the reflection peak in the 17.7 - 18.1 (2θ) range has a relative intensity between 0.09 and 0.40 with respect to the reflection peak at 17.9 (2θ) in the diffraction pattern of SAPO-34, all diffraction patterns being normalized to the intensity value of the reflection peak in the 20.5-20.7 (2θ) range.

12. (Original) The silicoaluminophosphate molecular sieve of claim 11 wherein the reflection peak in the 17.7 - 18.1 (2θ) range has a relative intensity between 0.10 and 0.35 with respect to the reflection peak at 17.9 (2θ) in the diffraction pattern of SAPO-34,

13. (Original) The silicoaluminophosphate molecular sieve of claim 1 wherein the silica to alumina molar ratio (SiO_2/Al_2O_3) ranges from 0.01 to 0.25.

14. (Original) The silicoaluminophosphate molecular sieve of claim 13 wherein the silica to alumina molar ratio (SiO_2/Al_2O_3) ranges from 0.02 to 0.20.

15. (Original) The silicoaluminophosphate molecular sieve of claim 13 wherein the silica to alumina molar ratio (SiO_2/Al_2O_3) ranges from 0.03 to 0.19.

16. (Original) The silicoaluminophosphate molecular sieve of claim 1, wherein the molecular sieve is comprised of crystalline plates, platelets or stacked platelets.

17. (Original) The silicoaluminophosphate molecular sieve of claim 16. Wherein the average smallest crystal dimension of the molecular sieve is less than 0.1 micron.

18. (Original) A catalyst comprising the silicoaluminophosphate molecular sieve of claim 1 and a binder.

19. (Original) A process for making an olefin product from an oxygenate feedstock comprising contacting said oxygenate feedstock with a catalyst comprising a silicoaluminophosphate molecular sieve comprising at least one intergrown phase of molecular sieves having AEI and CHA framework types, wherein said intergrown phase has an AEI/CHA ratio of from about 5/95 to 40/60 as determined by DIFFaX analysis, using the powder X-ray diffraction pattern of a calcined sample of said

silicoaluminophosphate molecular sieve, under conditions effective to form an olefin product.

20. (Original) The process of claim 19, wherein the oxygenate is selected from methanol; ethanol; n-propanol; isopropanol; C_4 - C_{20} alcohols; methyl ethyl ether; dimethyl ether; diethyl ether; di-isopropyl ether; formaldehyde; dimethyl carbonate; dimethyl ketone; acetic acid; and mixtures thereof.

21. (Original) The process of claim 20, wherein the oxygenate is selected from methanol, dimethyl ether, and mixtures thereof.

22. (Original) The process of claim 19, wherein the oxygenate is methanol.

23. (Original) The process of claim 19, wherein the selectivity to ethylene and propylene is equal to or greater than 75.0%.

24. (Original) The process of claim 23, wherein the ethylene to propylene ratio is equal to or greater than 0.75.

25. (Original) The process of claim 24, wherein the selectivity to propane is equal to or lower than 1.0%.

26. (Original) The process of claim 19, wherein the selectivity to propane is equal to or smaller than 1.0%.

27. (Original) A silicoaluminophosphate molecular sieve exhibiting an X-ray diffraction pattern having at least one reflection peak in each of the following ranges in the 5 to 25 (2θ) range:

2θ (CuKα)
9.3 - 9.6
12.7 - 13.0
13.8 - 14.0
15.9 - 16.1
17.7 - 18.1
18.9 - 19.1
20.5 - 20.7
23.7 - 24.0

and having no reflection peak in the 9.8 to 12.0 (2θ) range.

28. (Original) The silicoaluminophosphate molecular sieve of claim 27 exhibiting an X-ray diffraction pattern having no broad feature centered at about 16.9 (2θ).

29. (Original) The silicoaluminophosphate molecular sieve of claim 28, wherein the reflection peak in the 17.7 - 18.1 (2θ) range has a relative intensity between 0.09 and 0.40 with respect to the reflection peak at 17.9 (2θ) in the diffraction pattern of SAPO-34, all diffraction patterns being normalized to the intensity value of the reflection peak in the 20.5-20.7 (2θ) range.

30. (Original) The silicoaluminophosphate molecular sieve of claim 28, wherein the reflection peak in the 17.7 - 18.1 (2θ) range has a relative intensity between 0.10 and 0.35 with respect to the reflection peak at 17.9 (2θ) in the diffraction pattern of SAPO-34, all diffraction patterns being normalized to the intensity value of the reflection peak in the 20.5-20.7 (2θ) range.

31. (Original) The silicoaluminophosphate molecular sieve of claim 28, wherein the silica to alumina molar ratio (SiO_2/Al_2O_3) in said silicoaluminophosphate molecular sieve ranges from 0.01 to 0.25.

32. (Original) The silicoaluminophosphate molecular sieve of claim 27, wherein the silica to alumina molar ratio (SiO_2/Al_2O_3) in said silicoaluminophosphate molecular sieve ranges from 0.02 to 0.20.

33. (Original) The silicoaluminophosphate molecular sieve of claim 27, wherein the silica to alumina molar ratio (SiO_2/Al_2O_3) in said silicoaluminophosphate molecular sieve ranges from 0.03 to 0.19.

34. (Original) The silicoaluminophosphate molecular sieve of claim 28, wherein the molecular sieve is comprised of crystalline plates, platelets or stacked platelets.

35. (Original) The silicoaluminophosphate molecular sieve of claim 34, wherein the average smallest crystal dimenstion is less than 0.1 micron.

36. (Original) A catalyst comprising the silicoaluminophosphate molecular sieve of claim 28 and a binder.

37. (Original) A method for preparing the molecular sieve of claim 1 that comprises

a) combining a reactive source of silicon, a reactive source of phosphorus and a hydrated aluminum oxide in the presence of an organic structure directing agent (template) to form a mixture;

b) mixing and heating continuously the mixture prepared at step a) up to the crystallization temperature;

c) maintaining the mixture at the crystallization temperature and under stirring for a period of time of from 2 to 150 hours;

d) recovering crystals of the silicoaluminophosphate molecular sieve

wherein the mixture prepared at step a) has a molar composition within the following ranges:

P_2O_5 : Al_2O_3 from 0.6:1 to 1.2:1

SiO_2 : Al_2O_3 from 0.005:1 to 0.35:1

H_2O : Al_2O_3 from 10:1 to 40:1

and the template is a tetraethylammonium compound.

38. (Original) The method for preparing the molecular sieve of claim 37, wherein the crystallization temperature is between about 120°C and 250°C, preferably from 130°C and 200°C, most preferably from 150°C to 185°C.

39. (Original) The method for preparing the molecular sieve of claim 37, wherein step b) is carried out for a period of from about 5 to about 16 hours, preferably of from about 6 to 12 hours.

40. (Original) The method for preparing the molecular sieve of claim 38, wherein the template is a tetraethylammonium compound, preferably tetraethylammonium hydroxide.

41. (Original) The method for preparing the molecular sieve of claim 37, wherein the hydrated aluminum oxide is pseudoboehmite.

42. (Original) The method for preparing the molecular sieve of claim 37, wherein SAPO-34 seeds are combined with the reactive source of silicon, the reactive source of phosphorus, the hydrated aluminum oxide and the organic structure directing agent (template).